

3. Alienable vs. inalienable possessive constructions

1. The main claim

The universals of form-function relationship in alienability contrasts should not be explained in terms of **iconic motivation**, as in Haiman's (1983) influential paper, but by **economic motivation** and the **frequency of occurrence** in possessed constructions.

e.g. (1) Abun (West Papuan) (Berry & Berry 1999:77-82)

a. alienable possession

ji bi nngwe
I of garden
'my garden'

b. inalienable possession

ji syim
I arm
'my arm'

Haiman 1983:

For 'arm', a juxtaposition construction is chosen, with little "linguistic distance" between possessor and possessum. This iconically reflects the greater conceptual closeness of possessor and possessum (arms are not conceived of independently of their owners). By contrast, 'my garden' shows an overt marker *bi* between the possessor and the possessum, implying greater linguistic distance. This reflects the greater conceptual distance between 'garden' and 'I'.

My story:

Nouns like 'arm' normally, or at least very frequently, occur as possessums in possessive NPs, whereas for nouns like 'garden', this is much less frequent: We often talk about gardens without mentioning or even thinking about their possessors. This means that the overt expression of the possessive relation is expected anyway. Abun exploits this redundancy and uses an overt possessive marker only with nouns like 'garden', while body-part terms occur in a more economical markerless construction.

2. Definition of key concepts

possessive relation = relation of ownership (e.g. 'my garden'),
part-whole (e.g. 'my arm'),
or kinship (e.g. 'my father')

(similar constructions are also often used for other relations, e.g. 'my school', 'my report', but these are harder to compare cross-linguistically)

adnominal possessive relation =

relation in which the possessor is the head of a noun phrase and the possessum is a modifier, e.g. 'my book', 'Aisha's head'

but not: *Pedro hit me on the head.* (= 'hit my head') (external possession)

La mère lui a lavé les cheveux. 'Mother washed his hair.' ('to-him the hair')

possessive split = a situation whereby different classes of nouns require or favour different possessive constructions, e.g.

- (2) Jeli (Mande, Tröbs 1998:167-169): *possessum-determined split*
 a. *Soma ra monbilo*
 Soma of car
 'Soma's car'
 (**Soma monbilo*)
 b. *Soma bulo-ni*
 Soma arm-PL
 'Soma's arms'
 (**Soma ra bulo-ni*)
- (3) English *possessor-determined split*
 a. *the roof of the car*
 (vs. ?*the car's roof*)
 b. *Pedro's car*
 (vs. ?*the car of Pedro*)

(different possessive constructions may also alternate in a non-split way, e.g. German *das Dach des Autos/das Dach von dem Auto* 'the roof of the car', Thai *sāamii (kh๓๓๓) phĕuan (kh๓๓๓) nŭu* [husband of friend of I] 'my friend's husband')

***alienability split* =**

a possessive split determined by the possessum in which one of the classes characteristically consists of kinship terms and /or body part terms.

***inalienable possessive construction* =**

in an alienability split, a construction used with kinship and /or body part terms (and perhaps others)

***alienable possessive construction* =**

in an alienability split, a construction **not** used with kinship and /or body part terms

3. Overt vs. zero coding: iconic vs. economic motivation

3.1. The explanandum

Universal: If a language has an adnominal alienability split, and one of the constructions is overtly coded while the other one is zero-coded, it is always the inalienable construction that is zero-coded, while the alienable construction is overtly coded.

3.2. Examples e.g. Abun in (1), Jeli in (2), and also:

	alienable	inalienable
(4) Kabba (central Sudanic, Moser 2004:120-121)	<i>kùlā lè déné</i> work of woman 'a woman's work'	<i>məkəjə̀ gɔ̀ lɛ́</i> knee his.leg 'the knee of his leg'
(5) Lango (Nilotic, Noonan 1992:156-157)	<i>gwôkk à lócə̀</i> dog of man 'the man's dog'	<i>wì rwòt</i> head king 'the king's head'
(6) Dogon (Niger-Congo, Plungian 1995:35)	<i>tigɛ wo mɔ</i> name he GEN 'his name'	<i>u ba</i> you father 'your father'

(7) Karo (Tupian, Gabas 1999:148ff.)	<i>maʔwɪr at kaʔa</i> man of house 'man's house'	<i>aaro cagá</i> parrot eye 'parrot's eye'
(8) Haida (isolate, Enrico 2003:678ff.)	<i>Bill gyaara daallraay</i> Bill of money 'Bill's money'	<i>Joe ʔaww</i> Joe mother 'Joe's mother'
(9) Kayardild (Tangkic, Evans 1995:143, 248)	<i>dibirdibi-karran(-ju) dulk(-u)</i> Rock.Cod-GEN(-CASE) place(-CASE) 'Rock Cod's place'	<i>dangkaa thukanda</i> man chin 'man's chin'
(10) Mandarin (Sinitic, Li & Thompson 1981:113-116)	<i>tā-de chèshān</i> he-GEN shirt 'his shirt'	<i>tā(-de) māmā</i> he(-GEN) mother 'his mother'
(11) Samoan (Oceanic, Mosel & Hovdhaugen 1992:282-90)	<i>le naifi a le fafine</i> the knife of the woman 'the woman's knife'	<i>le uso o le fafine</i> the sister of the woman 'the woman's sister'

3.3. The iconicity explanation

Haiman 1983:

"...two concepts are close to the extent that they are perceived as inseparable (e.g. there is a closer conceptual link between a possessor and an inalienably possessed object than between a possessor and an alienably possessed object)." (p. 783)

Iconic motivation: "The linguistic distance between expressions corresponds to the conceptual distance between them." (p. 782)

Hence, the contrasts in (4)-(10), where the "linguistic distance" is greater in the alienable construction, is iconically motivated.

Adopted by various linguists, e.g. Chappell & McGregor (1989), Croft (1990:175-176), Koptjevskaja-Tamm (1996), Payne (1997:105), Lazard (2005:18).

3.4. The economy explanation

There is a marked difference in frequency of occurrence in possessive constructions: Inalienable nouns (=bodypart/kinship terms) very often occur as possessed nouns, whereas alienable nouns occur as possessed nouns much more rarely (cf. Nichols 1988:579: "those nouns which are most often possessed"). (See Table 1 for some corpus evidence from English.)

Hence, upon hearing an inalienable noun, hearers can predict that it will occur as possessum in a possessive construction, and overt marking is relatively redundant. This redundancy is exploited in some languages:

(12) *frequency* → *predictability* → *less need for coding* (cf. Zipf 1935)

Table 1: Some frequency figures from English
(spoken register of the British National Corpus, only preposed possessors counted)

bodypart terms				kinship terms				
"alienable" nouns								
	total possessed		%		total possessed		%	
<i>Head</i>	1699	868	51%	<i>Mother</i>	1892	1107	59%	<i>House</i>
<i>Hand</i>	2282	570	25%	<i>Father</i>	1473	888	60%	<i>Car</i>
<i>Hands</i>	970	545	56%	<i>Brother</i>	762	518	68%	<i>Job</i>
<i>Face</i>	1061	544	51%	<i>Brothers</i>	303	60	20%	<i>Dinne</i>
<i>Finger</i>	283	149	53%	<i>Sister</i>	636	402	63%	<i>Work</i>
<i>Fingers</i>	351	210	60%	<i>Sisters</i>	170	26	15%	<i>Health</i>
<i>Knee</i>	163	88	54%	<i>Wife</i>	1107	710	64%	<i>Tree</i>
<i>Knees</i>	127	70	55%	<i>Husband</i>	818	605	74%	<i>Knife</i>
<i>Ear</i>	222	91	41%	<i>Son</i>	733	351	48%	<i>Bed</i>
<i>Ears</i>	207	114	55%	<i>Sons</i>	134	46	34%	<i>Comm</i>
<i>Leg</i>	527	191	36%	<i>Daughter</i>	555	358	65%	<i>Meat</i>
<i>Legs</i>	522	255	49%	<i>Daughters</i>	86	25	29%	<i>Friend</i>
<i>Wrist</i>	49	17	35%	<i>Mum</i>	4253	1434	34%	<i>Money</i>
<i>Hair</i>	1154	624	54%	<i>Dad</i>	2779	1020	37%	<i>Bike</i>
<i>Nose</i>	372	235	63%	<i>Grandfather</i>	99	61	62%	<i>Suitcase</i>
<i>Neck</i>	326	156	48%	<i>Grandmother</i>	88	69	78%	<i>Tools</i>
<i>Belly</i>	45	15	33%	<i>Aunt</i>	111	44	40%	<i>Book</i>
<i>Skin</i>	347	72	21%	<i>Uncle</i>	236	73	31%	<i>Books</i>
<i>Elbow</i>	64	20	31%					<i>Room</i>
<i>Chest</i>	267	106	40%					<i>Bedroom</i>
								<i>Kitchen</i>
		mean	46%			mean	49%	

4. A wrong prediction of the iconicity explanation: middle position of the alienable marker

- Haiman's iconicity explanation predicts that the additional element in alienable constructions should occur in the middle between the possessor and the possessum (as seen in the canonical examples from Abun in (1), Jeli in (2), and most of the examples in (4)-(10).
- The economy explanation makes no such prediction about linear order.

It turns out that the possessive marker may also occur to the left or right of both the possessor and the possessum, as seen in (13). (See also the Dogon example in (6) above.)

(13)	alienable construction	inalienable construction
a. Puluwat (Elbert 1974:55, 61)	<i>nay-iy hamwol</i> POSS-1SG chief 'my chief'	<i>pay-iy</i> hand-1SG 'my hand'
b. 'O'odham (Zepeda 1983)	<i>ñ-mi:stol-ga</i> 1SG-cat-POSSD 'my cat'	<i>ñ-je'e</i> 1SG-mother 'my mother'
c. Koyukon (Thompson 1996:654, 667)	<i>se-tel-e'</i> 1SG-socks-POSSD 'my socks'	<i>se-tee'</i> 1SG-head 'my head'
d. Achagua (Wilson 1992)	<i>nu-caarru-ni</i> 1SG-car-POSSD 'my car'	<i>nu-wíta</i> 1SG-head 'my head'

Haiman (1983:795) himself cites the Puluwat example and recognizes that it is a problem for him:

"Clearly, the classifier is not interposed between possessor and possessum. It is possible that, at some earlier stage of the language, the possessive affixes also followed alienably possessed nouns... Word order could change in defiance of iconicity. Perhaps, then, it will be necessary to revise [my earlier statement in terms of distance]..., by claiming the following:

(37) In no language will the phonological expression of inalienable possession be bulkier than that of alienable possession.

Whether this revision is necessary depends on the frequency of the pattern exemplified by Puluwat."

But if this revision is adopted, we no longer have any evidence for iconicity! Rather, Haiman himself offers evidence for economy.

5. Further predictions made by both approaches

5.1. The cohesion scale

Haiman proposes a "scale of linguistic distance" as in (14).

- (14) Haiman's (1983:782) cohesion scale
- | | | |
|-------|----------|----------------------------|
| (i) | X word Y | (function-word expression) |
| (ii) | X Y | (juxtaposition) |
| (iii) | X-Y | (bound expression) |
| (iv) | Z | (portmanteau expression) |

I call it *cohesion scale* here, because (ii) and (iii) do not literally differ in distance, and distance is not really applicable to (iv).

Haiman's universal (27) (attributed to Joseph Greenberg, p.c.; 1983:793):

"In no language will the linguistic distance between X and Y be greater in signaling inalienable possession, in expressions like 'X's Y', than it is in signaling alienable possession."

Haiman notes that this also explains bound-free contrasts:

5.2. Bound vs. free expression

(15)	alienable construction	inalienable construction
a. Nakanai (Johnston 1981:217)	<i>luma taku</i> house I 'my house'	<i>lima-gu</i> hand-1SG 'my hand'
b. Hua (Haiman 1983:793)	<i>dgai? fu</i> I pig 'my pig'	<i>d-za?</i> 1SG-arm 'my arm'
c. Ndjébbana (McKay 1996:302-6)	<i>budmánda ngáyabba</i> suitcase I 'my suitcase'	<i>nga-ngardabbámba</i> 1SG-liver 'my liver'
d. Kpelle (Welmers 1973:279)	<i>ŋa pɛɛi</i> I house 'my house'	<i>m-pôlu</i> 1SG-back 'my back'

But the bound vs. free contrast is also expected on frequency grounds. More frequent items have a greater chance of being affixed than less frequent items: Affixation is basically the same as loss of grammatical autonomy, and loss of grammatical autonomy correlates highly with loss of phonological substance. Short items tend to become affixes.

The cohesion scale also makes an apparently correct prediction that Haiman does not note:

5.3. Portmanteau expression

(16)	alienable construction	inalienable construction
a. Ju 'hoan (Dickens 2005:35)	<i>mí útò</i> 'my car'	<i>taqè</i> 'mother' vs. <i>ááá</i> 'my mother' (* <i>mí taqè</i>)

- b. Lakhotá *t'ípi mi-t'áwa* 'my house' *ina* 'my mother'
 (Buechel 1939:103) *t'ípi ni-t'áwa* 'your house' *ni-hu* 'your mother'

However, portmanteau expression is not characteristic of inalienable possession in general, but only of forms with **high absolute frequency**: Irregularity is due to absolute frequency!

6. Predictions not made by Haiman's iconicity explanation

6.1. Length of the possessive marker

In all the examples in (15a-d), the possessive pronoun is shorter in the inalienable construction. This also occurs when both are free, or both are bound:

- (18) a. Ju | 'hoan *mì tjà* *m bá*
 (Dickens 2005:35) I house my father
 'my house' 'my father'
- b. Choctaw *chī-chokka* *chi-shki*
 2SG.AL-house 2SG.INAL-mother
 'your house' 'your mother'

6.2. Impossibile nouns

Some languages have some nouns that cannot occur as possessed nouns in a possessive construction, e.g. in Yucatec (Maya; Lehmann 1998:57-58):

- (19) *máak* 'person'
xch'up 'woman'
suhuy 'virgin'
ìik 'air, wind'
ka'n 'sky'
yóok'olkab 'world'

As Lehmann (1998) notes, person nouns and environmental nouns are "highly unfit as possessa" -- they occur very rarely as possessed nouns (English: *world* 2.6%, *woman* 0.6%, *sky* 0.4%).

Rare occurrence in grammar generally leads to a requirement of "bulkier" formal coding; but it may also result in **complete lack of grammatical coding**.

Excursus: Rarity and lack of grammatical coding

(cf. Haspelmath 2008)

(20) 2nd person vs. 3rd person imperative

short-long: Latin *canta-Ø* *canta-to*
 sing-2SG.IMPV sing-3SG.IMPV
 'sing!' 'let him sing!'

yes-no: German

	<i>singe!</i>	<i>*sing-to</i>
(21) inanimate vs. animate locative		
short-long:	Tamil	
	<i>maratt-il</i>	<i>maṇitaṇ-iṭam</i>
	tree-LOC	man-LOC
	'in the tree'	'in the man'
yes-no:	Dhivehi (Cain & Gair 2000:16)	
	<i>fotu-gā</i>	<i>*darī-gā</i>
	book-LOC	child-LOC
	'in the book'	'in the child'
(22) same-subject vs. different-subject construction of 'want'		
short-long:	German	
	<i>Ich will spielen.</i>	<i>Ich will, dass du spielst.</i>
	'I want to play.'	'I want you to play.'
yes-no:	Acehnese (Durie et al. 1994:177-8)	
	<i>Lôn-tém woe.</i>	<i>*Lôn-tém droeneuh woe.</i>
	I-want return	I-want you return
	'I want to return.'	'I want you to return.'
In a way, "grammatical coding" implies "short coding"; and "no coding" does not mean that a lexical-syntactic paraphrase is impossible -- but it is invariably longer.		

6.3. Possidend nouns

(*nomina possidenda* 'nouns that must be possessed')

In many languages, some nouns **must** occur as possessed nouns in possessive constructions, they cannot (normally) occur in an **unpossessed, absolute** way:

"*possidend nouns*" (=obligatorily possessed nouns, "bound inalienables", Nichols & Bickel 2005a)

Two subtypes:

A. Absoluble possidend nouns: (Lehmann 1998:51)

These can be used absolutely after "absolutization" through a *derelationalizing* ("alienizing") marker:

(23) Yucatec *tatah-* *in tàatah* *le tatah-tsil-o*
 'father' '1SG father' ART father-DEREL-ART
 'my father' 'the father' (Lehmann
 1998:52)

(24) Koyukon *-tlee'* *se-tlee'* *k'e-tlee'*
 1SG-head DEREL-head

667)	'head'	'my head'	'head'	(Thompson 1996:654-
(25) Paamese	<i>vat-</i> head 'head'	<i>vat-in</i> head-3SG.POSS 'his/her head'	<i>a-vat</i> DEREL-head 'head'	(Crowley
1996:417)				
(26) Cahuilla	<i>puč-</i> 'eye'	<i>hé-puš</i> 3SG.POSS-eye 'his eye'	<i>púč-il</i> eye-DEREL 'eye'	(Seiler
1983:25)				

B. Inabsoluble possidend nouns

e.g. (27) Yucatec	<i>ich</i> <i>mòots</i> <i>ti'a'l</i>	'face' 'root' 'property'	(Lehmann 1998:52)
-------------------	---	--------------------------------	-------------------

- Again, rare occurrence (of the unpossessed construction) leads to a complete lack of grammatical coding.
- Haiman's iconicity does not make any predictions about unpossessed constructions, but the economy account predicts just what we see:

Alienable nouns tend to require overt coding (or a paraphrase) in the possessed construction, whereas inalienable nouns tend to require overt coding in the unpossessed construction.

Compare the parallel with imperatives:

(28) Koyukon	unpossessed	possessed
alienable	<i>teł</i> socks 'socks'	<i>se-tel-e'</i> 1SG-socks-POSSD 'my socks'
inalienable	<i>k'e-tlee'</i> UNSP-head 'head'	<i>se-tlee'</i> 1SG-head 'my head'
(29) Turkish	imperative	indicative
2nd person	<i>gel</i> come(2SG.IMPV) 'come!'	<i>gel-di-n</i> come-PST-2SG 'you came'
3rd person	<i>gel-sin</i> come-3SG.IMPV 'let her come'	<i>gel-di</i> come-PST(3SG) 'she came'

7. The diachronic creation of alienability contrasts

There are at least two ways in which high frequency of possessed use leads to the diachronic creation of alienability contrasts:

- differential phonological reduction
- differential inhibition of a novel construction type

7.1. Differential phonological reduction

• This is the mechanism that Zipf (1935) proposed to explain the frequency effects. Examples:

- (31) a. Old Italian < Latin
mogli~~a~~-ma < *mulier mea* 'my wife'
fratel-to < *fratellus tuus* 'your brother'
**terra-ma* (cf. *terra mea*) 'my land' (alienable noun)

b. Nyulnyul (Nyulnyulan; northern Australia; McGregor 1996):

- | | | | |
|----------------------|-----|--------------------------|-----------------------|
| <i>jan yil</i> | vs. | <i>nga-lirr</i> | (< <i>ngay lirr</i>) |
| I.OBL dog | | 1SG-mouth | I mouth |
| 'my dog' (alienable) | | 'my mouth' (inalienable) | |

7.2. Differential expansion/inhibition of a new construction

• Most cases of economical coding are not due to differential phonological reduction, but to differential expansion of a new, more complex construction (often called "periphrasis").

• Such novel constructions typically make an existing meaning more transparent by including a special additional morpheme, and they are introduced when speakers want to call special attention to the relevant meaning.

• A novel construction may then expand and become more frequent in an increasing number of new contexts, but it will be prevented from spreading to the contexts in which the relevant meanings occur most often.

• Such "inhibition of expansion" may occur for two reasons:

(i) One reason is that the most frequently occurring combinations of meanings are the most deeply entrenched in the speakers' mental grammars and are thus unlikely to be replaced by innovations. Here we see **the conserving effect of usage frequency**.

(ii) But another reason **the redundancy coming from the hearers' expectations**: the expression of the meaning in question is redundant when it is typically associated with another meaning.

An example: In Classical Arabic, all nouns can take possessive affixes:

- (32) *yad* 'hand' *kitaab* 'book'
yad-ii 'my hand' *kitaab-ii* 'my book', etc.

In Maltese, only inalienable nouns (body part terms/kinship terms) take possessive affixes; others occur in a periphrastic construction with *tiegħ-* 'of':

- (33) *id* 'hand' *ktieb* 'book'
 id-i 'my hand' **ktieb-i* 'my book'
 il-ktieb tiegħ-i (originally: 'the book my-possession')

The novel construction involving the possessive noun did not expand to inalienable nouns: Maltese does not allow **l-id tiegħ-i* 'my hand' (Koptjevskaja-Tamm 1996).

- Dahl & Koptjevskaja-Tamm (1998) make the strong claim that differential expansion is the only way in which an inalienability split can arise:

"We suggest the generalization that an expanding possessive construction must encroach on the territory of pronominal possession for an alienability split to arise".

But see (31a-b) above for attested cases of differential phonological reduction.

8. Conclusion

- Many cross-linguistically recurring properties of inalienable and alienable adnominal possessive constructions can be explained by the fact that inalienable nouns occur more frequently as possessed nouns.
- Haiman's (1983) well-known iconicity explanation is less general and makes some wrong predictions.
- More generally, it seems that **the explanatory power of iconicity has been overestimated**. For instance, all "iconicity of markedness matching" effects can be explained by frequency asymmetries as well (Haspelmath 2006:40, in prep.)
- If we want to understand language structure, we need to look at language use, in particular frequency of use.

9. Postscript: William Croft's objections

Croft (2007):

Haspelmath's frequency explanation is based on the relative frequency of the possessed to the unpossessed form of a noun. In text counts from English and Spanish, Haspelmath demonstrates that the relative frequency of body part terms and kinship terms in the possessed form compared to the unpossessed form is greater than the relative frequency of alienable nouns in the possessed form compared to the unpossessed form. Haspelmath notes that inalienable nouns in the unpossessed construction are crosslinguistically sometimes overtly coded (see his Koyukon examples), and that this fact can be explained in terms of frequency. In fact, Haspelmath's text counts actually indicate that even kinship terms and body part terms occur more frequently in the unpossessed construction.

Thus, an economy explanation only works if one uses relative frequency of unpossessed vs. possessed inalienable nouns compared to the relative frequency of unpossessed vs. possessed alienable nouns. But all other examples of typological markedness—frequency-based differences in the structural expression of concepts—are of absolute frequency, not relative frequency. Many such examples are given in Greenberg (1966) and Bybee (1985); see

also Croft (2003:151, 154). In the one study that that compares relative and absolute frequency with respect to phenomena attributed to economy, namely morphological irregularity in Russian nominal paradigms (Corbett et al. 2001), absolute frequency was a strongly significant factor, but relative frequency was only weakly significant (see Croft 2003:206-7).

My reply:

We consider two forms (A and B) that are paradigmatic alternatives (Croft 2003:90). In the case of "markedness reversal", there are two classes of lexemes (I and II) that behave differently, both in terms of frequency and (consequently) in terms of coding. ... For each noun, the first column gives the absolute frequency, and the second column gives the relative frequency in percentages.

		class I (singular-prominent)		class II (plural-prominent)			
form A (singular)	A	<i>house</i>	4811	83%	<i>criterio-n</i>	137	27%
form B (plural)		<i>house-s</i>	1020	17%	<i>criteria</i>	365	73%
			5831	100%		502	100%

Table 1: Frequencies of house and criterion (singular/plural) in the British National Corpus (spoken)

The standard frequency-based and least-effort-based explanation of the coding contrasts is that they are due to within-class, across-form differences in frequency: In each case, the overtly coded form is significantly rarer than the other form. ... Clearly, across-class, within-form comparisons are not meaningful in the present context.

The picture for alienability contrasts is completely analogous. ...

		class I (alienable)		class II (inalienable)			
form A (unpossessed)		<i>house</i>	3614	75%	<i>nose</i>	134	36%
form B (possessed)		<i>(someone's) house</i>	1197	25%	<i>(someone's) nose</i>	238	64%
			4811	100%		372	100%

Table 2: Frequencies of house and nose (unpossessed/possessed) in the British National Corpus (spoken)

In Table 2, the proportion of form B in class II is more than 50%, as is the proportion of form B (plural) in class II (plural-prominent) in Table 1. Likewise, the proportion of form B in class I is below 50% in both tables. However, this is not actually necessary in order to explain the form contrast between class I and class II. All that matters is that the proportion of form B is significantly higher in class II than in class I. A higher proportion of form B means that form B is more predictable than in class I, which means that it is more likely to be expressed in a short way. Thus, while the figures in Table 3 are not as overwhelmingly significant as those in Tables 1 and 2, they are still significant and sufficient to explain the fact that in some languages, paired body parts have longer singulars than plurals.

		class I (singular-prominent)		class II (plural-prominent)			
form A (singular)		<i>nose</i>	372	92%	<i>foot</i>	886	51%
form B (plural)		<i>nose-s</i>	32	8%	<i>feet</i>	877	49%
			404	100%		1763	100%

Table 3: Frequencies of nose and foot (singular/plural) in the British National Corpus (spoken)

... Croft also mentions Corbett et al.'s (2001) discussion of relative and absolute frequency, and their result that relative frequency is much less important than absolute frequency. However, Corbett et al. are interested in morphological irregularities, not in coding asymmetries. As I note at the beginning of §6 of my paper, "high absolute frequency

favours suppletion (and irregularity more generally)", because irregularity is due to memorizability and has nothing to do with predictability.

Thus, coding asymmetries that correlate with frequency asymmetries are due to differential predictability, which can be measured by relative frequencies. Absolute frequencies explain irregularity. Haiman's cohesion scale has two completely different explanations.

References

- Berry, Keith & Berry, Christine. 1999. *A description of Abun: a West Papuan language of Irian Jaya*. (Pacific Linguistics, B-115) Canberra: Australian National University.
- Buechel, Eugene. 1939. *A grammar of Lakota: the language of the Teton Sioux Indians*. St. Francis Mission/Rosebud Educational Society.
- Cain, Bruce D. & Gair, James W. 2000. *Dhivehi (Maldivian)*. Munich: Lincom.
- Chappell, Hilary & McGregor, William. 1989. "Alienability, inalienability and nominal classification." *Berkeley Linguistics Society (General Session)* 15:24-36.
- Chappell, Hilary & McGregor, William. 1996. "Prolegomena to a theory of inalienability." In: Chappell, Hilary & McGregor, William (eds.) *The grammar of inalienability*, 3-30. Berlin: Mouton de Gruyter.
- Croft, William. 1990. *Typology and universals*. Cambridge: Cambridge University Press.
- Croft, William. 2007. "On iconicity of distance." (Commentary on Haspelmath 2007.) To appear in *Cognitive Linguistics*
- Dahl, Östen & Koptjevskaja-Tamm. 2001. "Kinship in grammar." In: Baron, Irène & Herslund, Michael & Sørensen, Finn (eds.) 2001. *Dimensions of possession*. Amsterdam: Benjamins, 201-225.
- Dahl, Östen & Maria Koptjevskaja-Tamm. 1998. "Alienability splits and the grammaticalization of possessive constructions." In: Haukioja, Timo (ed.), *Papers from the 16th Scandinavian Conference of Linguistics*, 38-49. Turku: University of Turku.
- Dickens, Patrick J. 2005. *A concise grammar of Ju | 'hoan*. Cologne: Köppe.
- Durie, Mark, Bukhari Daud and Mawardi Hasan. 1994. "Acehnese." In: Goddard, Cliff & Wierzbicka, Anna (eds.) *Semantic and lexical universals*. Amsterdam: Benjamins, 171-201.
- Elbert, Samuel. 1974. *Puluwat grammar*. (Pacific Linguistics, B-29.) Canberra: ANU.
- Enrico, John. 2003. *Haida syntax*. 2 vols. Lincoln: University of Nebraska Press.
- Evans, Nicholas. 1995. *A grammar of Kayardild*. Berlin: Mouton de Gruyter.
- Gabas, Nilson. 1999. *A grammar of Karo, Tupi (Brazil)*. Ph.D. dissertation, UC Santa Barbara.
- Haiman, John. 1983. "Iconic and economic motivation." *Language* 59: 781-819.
- Haspelmath, M. 2006. "Against markedness (and what to replace it with)". *J. of Linguistics* 42.1: 1-46.
- Haspelmath, Martin. 2007. "Frequency vs. iconicity in the explanation of grammatical asymmetries." To appear in *Cognitive Linguistics*
- Haspelmath, Martin. 2007+. "Creating economical morphosyntactic patterns in language change." To appear in: Jeff Good (ed.) *Language universals and language change*. Oxford: Oxford Univ. Press.
- Heine, Bernd. 1997. *Possession: cognitive forces, sources, and grammaticalization*. Cambridge: CUP.
- Johnston, Ray. 1981. "Conceptualizing in Nakanai and English." In: Franklin, Karl (ed.) *Syntax and semantics in Papua New Guinea languages*. Ukarumpa, Papua New Guinea: SIL, 212-224.
- Koptjevskaja-Tamm, Maria. 1996. "Possessive noun phrases in Maltese: Alienability, iconicity, and grammaticalization." *Rivista di Linguistica* 8.1: 245-274.
- Koptjevskaja-Tamm, Maria. 2003. "Possessive noun phrases in the languages of Europe." In: Plank, Frans (ed.) *Noun phrase structure in the languages of Europe*. Berlin: Mouton de Gruyter, 621-722.
- Lazard, Gilbert. 2005. "What are we typologists doing?" In: Frajzyngier, Zygmunt & Hodges, Adam & Rood, David S. (eds.) *Linguistic diversity and language theories*. Amsterdam: Benjamins, 1-23.

- Lehmann, Christian. 1998. *Possession in Yucatec Maya: Structures – functions – typology*. Munich: Lincom Europa.
- Lévy-Bruhl, Lucien. 1914. "L'expression de la possession dans les langues mélanésiennes." *Mémoires de la Société de Linguistique de Paris* 19.2: 96-104.
- Li, C. N. & Thompson, S. A. 1981. *Mandarin Chinese: A functional reference grammar*. Berkeley: UC Press.
- McGregor, William. 1996. "The grammar of nominal prefixing in Nyulnyul." In: Chappell, Hilary & McGregor, William (eds.) 1996. *The grammar of inalienability*. Berlin: Mouton de Gruyter, 251-292.
- McKay, Graham R. 1996. "Body parts, possession marking and nominal classes in Ndjébbana." In: Chappell, Hilary & McGregor, William (eds.) *The grammar of inalienability*, 293-326. Berlin: Mouton de Gruyter.
- Mosel, Ulrike & Hovdhaugen, Even. 1992. *Samoan reference grammar*. Oslo: Scandinavian UP.
- Nichols, Johanna & Bickel, Balthasar. 2005. "Possessive classification." In: *WALS*, 242-245.
- Nichols, Johanna. 1988. "On alienable and inalienable possession." In: Shipley, William. (ed.) *In honor of Mary Haas*. Berlin: Mouton de Gruyter, 475-521.
- Noonan, Michael. 1992. *A grammar of Lango*. (Mouton Grammar Library, 8.) Berlin: Mouton de Gruyter.
- Plungian, Vladimir. 1995. *Dogon*. Munich: Lincom Europa.
- Ronneberger-Sibold, Elke. 1988. "Entstehung von Suppletion und Natürliche Morphologie." *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 41: 453-462.
- Thompson, Chad. 1996. "On the grammar of body parts in Koyukon Athabaskan." In: Chappell, Hilary & McGregor, William (eds.) *The grammar of inalienability*, 651-676. Berlin: Mouton de Gruyter.
- Tröbs, Holger. 1998. *Funktionale Sprachbeschreibung des Jeli (West-Mande)*. (Mande Languages and Linguistics; 3) Köln: Köppe
- WALS: The World Atlas of Language Structures*, ed. by M. Haspelmath, M.S. Dryer, D. Gil, and B. Comrie. Oxford: Oxford University Press.
- Welmers, Wm. E. 1973. *African language structures*. Berkeley: University of California Press.
- Wilson, Peter J. 1992. *Una descripción preliminar de la gramática del Achagua (Arawak)*. Bogotá: Asociación Instituto Lingüístico de Verano.
- Zepeda, Ofelia. 1983. *A Papago grammar*. Tucson: University of Arizona Press.
- Zipf, George K. 1935. *The psycho-biology of language: an introduction to dynamic philology*. Houghton Mifflin (Republished 1965 by MIT Press.)